Sangetta Gad
University of Houston

l The University of Houston - Downtown (UH-D) is committed to the advancement of education and technology. In particular, the Center for Computational Science and Advanced Distributed Simulations (CCSDS) at UH-D has maintained several enrichment programs that are trying to integrate mathematics, science, and technology for use in Houston-area middle school and high schools. Current trends in education are pushing for this integration, due to the increasing overlap of science and mathematics, and the larger role of technology in all areas. The key force in our endeavor is the Teacher Training Program.

The goal of the Teacher Training Program is to prepare middle school and high school teachers for the introduction of integrated course material into conventional mathematics and science curriculums. It is also intended to give instructors for the CCSDS hosted Saturday Academy and Houston PREP enrichment programs a chance to refine new lessons that can be introduced into our cutting edge programs. By applying new computational and online resources to typical lessons, teachers can create an interactive academic environment that will improve retention and understanding. After acquiring this knowledge, these teachers are asked to return in subsequent years as "Master Teachers", who will pass the techniques to new teachers. In addition, these teachers return to their respective institutions to relay the information to their colleagues. This increases the effective number of teachers influenced by the programs.

The preparation for the training session involves exposing the mentors to current technology and leaders in the field of computational sciences. Teachers visited the San Diego Supercomputing Center and attended various workshops pertaining to the integration of technology and education. While in San Diego, teachers attended a seminar conducted by Kris Stewart on the emerging branch of computational science using internet resources. Cynthia Lanius, from Rice University, gave a presentation regarding similar topics at UH-D. She has created a web site with interactive lesson plans, many of which are currently used in the Saturday Academy and Houston PREP programs. The three university professors who will be mentoring this year also attended a week long workshop by Shodder to develop a curriculum utilizing the integration of mathematics and technology. This will become a college course for teacher certification.

To supplement this training program, CCSDS participated in the HU-LINC training for middle school teachers. The training followed the guidelines and objectives set by the Texas Education Agency (TEA).The main role of the UH-D trainers was to integrate technology in achieving the TEA objectives.

Our most successful teacher training was conducted before the beginning of the summer program Houston PREP. Participating mathematics and science teachers teamed up and developed lesson programs for the upcoming 7 weeks. They were trained to use technology resources such as graphing calculators, computer based programs such as SkyMath, and many interactive web sites.

The use of new technology in education is slowly becoming more common. The only obstacle is the lack of proper training and exposure for instructors. It is our hope that the Teacher Training Program conducted through the Center for Computational Sciences and Advanced Distributed Simulations will provide teachers with new tools with which to excite and encourage students.